

Ceratocheilus gilesi, sp. n.

Head dark grey. Thorax and abdomen almost uniform brownish ochreous, thorax without distinct markings. Wings entirely unspotted, not even darkened on the cross-veins; discal cell open, coalescent with second posterior cell; great cross-vein slightly beyond base of second posterior cell; second vein somewhat straighter and shorter than in *C. cornigerum*.

Length of body 5.5 mm.; rostrum 5; wing 4.5.

The open discal cell and hyaline wings of this species render it very distinct.

SUMMARY.

The following species have been noticed in the preceding paragraphs:—

1. *Ceratocheilus cornigerum* (Speiser).
Syn. *Styringomyia cornigera*, Speiser (1908).
Ceratocheilus winnsampsoni, Wesché (1910).
2. *Ceratocheilus gilesi*, sp. n.
3. *Toxorhina* (?) *madagascariensis*, Meunier.
4. *Toxorhina grahami* (Wesché).
Syn. *Neoceratocheilus grahami*, Wesché.
5. *Toxorhina cisatlantica*, Speiser.
6. *Styringomyia didyma*, Grimshaw (1901).
Syn. *Idiophlebia pallida*, Grünberg (1903).
7. *Styringomyia crassicosta* (Speiser).
Syn. *Idiophlebia crassicosta*, Speiser.

XXXIX.—*Descriptions and Records of Bees.*—XXXVIII.
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Megachile bicolor taiwana, subsp. n.

♀.—Differs from Indian *M. bicolor* as follows: abdomen not so broad at base; hair of pleura entirely pale, slightly yellowish, the general effect being pale yellowish grey; no fuscous hair near base of wings above; ventral scopa a little reddish subapically.

Hab. Formosa; one at Takao, July 26 (*Sauter*). Berlin Museum.

I previously recorded this as *M. bicolor*, but a renewed study, in comparison with the Indian form, indicates that it is subspecifically distinct. It looks like *M. rufovittata*, but, aside from the colour of the scopa, the clypeus is depressed in the middle and the shining supra-clypeal area is more finely punctured.

Megachile caldwelli, sp. n.

♀.—Length about 17 mm.

Robust, black, with pale hair; head broad; sides of face and front with much white hair; clypeus irregularly punctured, the punctures of different sizes, the middle depressed and more sparsely punctured, the apical margin broadly shallowly emarginate and depressed in the middle; supra-clypeal area transversely obtusely elevated, with a shallow transverse median depression; flagellum pale brownish beneath; vertex rather densely punctured on a shining ground; mesothorax with strong rather close punctures; scutellum extremely densely punctured; hair of thorax pale, but pleura with a very broad band of fuscous hair from the wings downward; tegulae dark castaneous. Wings reddish. Legs with pale hair; middle femora broadly flattened behind; inner side of tarsi with ferruginous hairs; hind basitarsi very broad. Abdomen broad, hardly tapering, the hind margins of the segments rather narrowly ferruginous; dorsal surface of abdomen covered with light ferruginous hair, and ventral scopa entirely of the same colour.

Hab. Foochow, China (*H. R. Caldwell*). U.S. National Museum.

In my table of Chinese *Megachile* (*Trans. Amer. Ent. Soc.* 1910, p. 212) this runs nearest to *M. mongolica*, which is a much smaller species. In Bingham's table of Indian species it runs nearest to *M. ardens*, which has black pubescence on the front and fuscous black on the legs; or to *M. fulvo-vestita*, which has the clypeus carinate. The face and mandibles are constructed much as in *M. bicolor*. Superficially, the insect looks like the Formosan *M. takaensis*, but the wings are not so dark, the clypeus and supra-clypeal area are quite different, and the mandibles have a strong Y-shaped ridge, wanting in *takaensis*. *M. caldwelli* may be said to combine the principal structural characters of *bicolor* with the appearance and colour of *takaensis*. The larger size, white hair of face, less densely punctured mesothorax,

and absence of shining areas on the axillæ readily separate *caldwelli* from *rufovittata*.

Caupolicana vestita (Smith, 1879), var. *piurensis*, v. nov.

Professor C. H. T. Townsend has sent me four specimens, which he collected at Piura, Peru, April 28th, 1911, at flowers of an Asclepiadaceous climber, which is perhaps *Philibertella flava* (*Philibertia flava*, Meyen). Pollen-bodies of the Asclepiad adhere to the legs of some of the specimens. Smith's species was based on a male from Peru. The female is similar, about 15 mm. long. Fresh specimens have the hair on checks and underside of body very white, and my material has black legs, with only the tarsi of the males somewhat rufescent. As Smith definitely states that the tibiæ and tarsi are ferruginous in his insect, I regard the Piura form as a variety or race. In the female the middle and hind tibiæ and tarsi are black-haired on the outer side, but the hind tibiæ have abundant curled long white hair beneath. The hind tibiæ and tarsi are also black-haired on the inner side, and the large scopa of the hind femora is greyish black. Mandibles tridentate in female, bidentate in male: lobes of tongue very long and pointed; second s.m. about half size of third; abdomen of female dorsally with brilliant orange-fulvous tomentum, at sides black (*i. e.* the surface visible) with broad white apical hair-bands, fifth segment with black hair, white at extreme sides; male abdomen similar, fifth segment black-haired basally, with a broad white hair-band, and no fulvous except a slender longitudinal median line of hair, which may be absent.

Trigona mellaria, Smith.

Piura, Peru, at same Asclepiadaceous flowers as *Caupolicana vestita*, var. *piurensis*, April 28 (*C. H. T. Townsend*). At an earlier date males were sent, with the information that the species nests in mesquite trunks. The Peruvian specimens have been compared with a cotype from F. Smith's collection. The male differs from the worker by the much narrower face, with silvery white pubescence at sides, and has more light colour on the legs. The male hind tibiæ are largely pale yellow, marked with black and suffused with red. The species was described from Panama.

Trigona townsendi, sp. n.

Worker: about $2\frac{1}{2}$ mm. long.

Compact, with short abdomen, black, nearly hairless; scape slender, ferruginous, dusky at apex, flagellum dark; mandibles rufous; face broad and flat; head and mesothorax dullish, finely sculptured; antennæ close together, a keel extends upwards from their base, changing to a groove on upper part of front; cheeks, metathorax, and pleura shining; tegulæ testaceous. Wings hyaline, with pallid nervures; stigma large, narrowly margined with dusky. Legs very dark fuscous, small joints of tarsi ferruginous; posterior tibiæ moderately broad. Abdomen smooth and exceedingly shiny. The following characters are seen with the compound microscope: mandibles edentate; malar space well developed, about $104\ \mu$ long; distance between antennal sockets hardly $100\ \mu$; front with a minutely cancellate sculpture; mesothorax very minutely cancellate, except at sides, where this sculpture gives way to coarse ridges directed toward the margin; scutellum more feebly sub-cancellate, the tendency being toward transverse markings; metathorax inflated, delicately cancellate, the well-defined polygonal areas about twice as large as those on mesothorax; width of hind tibia about $270\ \mu$; last antennal joint flattened and curved, rather spoon-like,

Hab. Piura, Peru, October (C. H. T. Townsend, 124). Resembles *T. schulthessi*, Friese, from Guatemala, but is smaller, with the thorax partly shining. *T. muelleri*, Friese, and *T. dutraë*, Friese, are easily separated by the shining head and thorax; and *T. schrottkyi*, Friese, by its white-haired face and absence of a distinct malar space. *T. fraissei*, Friese, is much more hairy.

Xylocopa nitidiventris, Smith.

X. morawitzi, Pérez, 1901, is a synonym, according to a note pencilled by Professor Pérez on my copy of his description.

Xylocopa varians incarum, subsp. n.

♀.—Similar to *X. varians ecuadorica*, Ckll., but differing as follows: scattered pale hairs of abdomen white (not golden); extreme sides of segments 2 to 4 with narrow but dense white apical hair-bands; the pale yellowish hair of legs of *ecuadorica* wholly replaced by hair of a fine deep copper-red. Tegulæ black, slightly reddish posteriorly.

Wings dusky hyaline, scarcely yellowish. Compared with a specimen of *ecuadorica*, the type of *incarum* is decidedly more robust.

♂.—Less robust; face narrow, with the clypeus, a broad supraclypeal mark, lateral face-marks (extending narrowly along orbits to level of anterior ocellus), greater part of labrum, stripe on mandibles, scape in front, and stripe on basal half of third antennal joint (the apical part in front red) all *white*; tarsi with much copper-red hair, and a line of the same on outer side of hind tibiae, failing basally. Compared with the male *X. splendidula*, Lep. (Villa Encarnacion, Paraguay, *Schrottky*), this differs in being smaller; eyes smaller, much less converging above; labrum and mandibles with light marks; hair of pleura black; tarsi with much red hair, &c. It is at present uncertain whether *varians*, *ecuadorica*, and *incarum* should be regarded as closely allied species, or races of one (*varians*).

Hab. Piura, Peru (*C. H. T. Townsend*). The type (female) from flowers of water-melon in May; the male, April 28, at the same Asclepiadaceous flowers as *Trigona mellaria*, &c. The insect is dedicated to the Incas, who doubtless observed it in ages past.

Xylocopa morio callichlora, subsp. n.

♀.—Wings shining brilliant golden green, with slight coppery tints.

Hab. Piura, Peru, April 28, 1911 (*C. H. T. Townsend*). Pérez records what is evidently the same variety from Guayaquil. It is just possible that *X. frontalis quadrimaculata*, Meunier, from Quito, is its male. Dalla Torre's Catalogue erroneously gives Cayenne as the locality of *quadrimaculata*.

Ptiloglossa olluntayi, sp. n.

♀.—Length about 16 mm., anterior wing $11\frac{1}{2}$.

Light rufo-fulvous, the head and thorax dusky above, the cheeks black; hind margins of abdominal segments broadly hyaline, with a greenish lustre; legs clear ferruginous; hair of head and thorax abundant, white on cheeks, pale yellowish on face (whiter at sides, where it is dense), broadly tipped with grey on vertex, on thorax fulvous, tipped with fuscous on dorsum, below wings, and at sides of metathorax; hair of legs pale yellowish; first abdominal segment with much erect pale fulvous hair, along hind margin strongly stained with fuscous; remaining segments

with pale depressed hair, very thin on second and third, but at apex becoming long and dense; no hair-bands; clypeus and labrum yellow, the clypeus flattened and shining in middle, hardly punctured; mandibles bidentate, ferruginous basally, dark apically; malar space very short; eyes very large, converging above; ocelli very large, in a very high triangle, the lateral ones almost touching the eyes; scape rather short, dusky reddish; flagellum dark above, redder but not light beneath, bright ferruginous at apex; third antennal joint very long; area of metathorax triangular, smooth, free from hair; tegulae clear rufo-testaceous. Wings yellowish, nervures ferruginous, stigma obsolete; venation as in *P. matutina* (Schrottky); hind spur of hind tibiae very long and slender, anterior spur thick at base, with a twisted linear end.

Hab. Piura, Peru, March 1911 (*C. H. T. Townsend*).

Named after the hero of the famous ancient Peruvian drama "Ollantay." A species without striking structural features, but readily distinguished by its fulvous colour, which makes it look like *Xenoglossa mustelina* (Fox). The eyes converge more above than in *P. matutina*. *P. eburnea*, Friese, from Peru, is readily distinguished by its dark tegumentary colours.

Megachile piurensis, sp. n.

♂.—Length about 12 mm.

Compact, with very short abdomen; intense black, with black hair, except as follows: clypeus and middle of face covered with pure white hair, in two tufts abruptly parted in the middle, one directed upwards, the other downwards (but sides of face with black hair); front and anterior sides of mesothorax with the hair obscurely greyish; a grey tuft in front of and beneath tegulae; long white hair extending from anterior femora and trochanters behind; hair of abdomen wholly black; eyes dark reddish; facial quadrangle about square; antennae slender, entirely black; mandibles rather broad; sides of upper part of front shining and finely punctured, vertex duller, more coarsely punctured; mesothorax and scutellum entirely dull and granular; tegulae black. Wings fuliginous; anterior coxae without spines; anterior tarsi simple, black-haired, the small joints with short glittering light hair on inner side; sixth abdominal segment descending, broadly excavated in the manner of a half-circle, the sides of the excavation long and pointed.

Hab. Piura, Peru, March 1911 (*C. H. T. Townsend*).

A striking species, closely related in structure to *M. saulcyi*, Guér. (*chilensis*, Spinola), though very distinct by the black hair and dark wings. In Vaehal's table of males in 'Revue d'Entomologie,' 1908-1909, it runs to *M. tricincta*, Friese, except that the anterior legs have much pale hair behind. It is also easily separated from *tricincta* by the entirely black-haired abdomen. In Friese's table of males in 'Flora og Fauna,' 1908, it runs nearest to *M. argentina*, Friese, which is very similar, but has the flagellum somewhat broadened at end, and three teeth on each side of the incision at end of abdomen.

Callomelitta picta, Smith.

Melbourne, Victoria, June 26, 1892 (*French*). Froggatt coll., no. 102.

Euryglossa hæmatura, sp. n.

♀.—Length about 14 mm., anterior wing $8\frac{1}{2}$.

Black, with very scanty pale hair, last two abdominal segments above and below bright ferruginous, with reddish hair. Legs very dark reddish, superficially appearing black, the inner side of tarsi with dense very pale yellowish hair. Head very large, quadrate; eyes moderately converging above; facial foveæ deep narrow channels; mandibles large, curved; labrum shining, depressed in middle; clypeus large, smooth and shining, with scattered small punctures; front closely punctured; vertex with large well-separated punctures; cheeks large, with punctures of various sizes; antennæ very dark reddish, the flagellum with a row of fulvous spots beneath; mesothorax and scutellum shining, with strong widely separated punctures; area of metathorax smooth; tegulæ dark reddish. Wings dusky, reddish; stigma and nervures brown; first r. n. joining second s.m. at a distance from base nearly equal to length of first t.-c.; outer margin of basal half of hind tibia strongly dentate; hind spur finely pectinate. Abdomen dullish, with a hardly noticeable greenish tinge.

Hab. Walcha, New South Wales, March 20, 1903 (*W. W. Froggatt*, 70).

Resembles *E. terminata*, Smith, but is very much larger.

Euryglossa geminata, sp. n.

♀.—Length about 9 mm.

Black, with very bright chrome-yellow markings, as follows: clypeus, transversely semilunar supraclypeal mark,

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broad lateral face-marks (filling space between clypeus and eye, and ending squarely, hardly at all narrowed, at about level of upper part of antennal sockets), anterior lateral corners of mesothorax very broadly, scutellum, postscutellum, and a very large triangular mark (one side basal) on each side of second abdominal segment; cheeks (which are small), pleura, metathorax, legs, and basal part of abdomen obscurely dark reddish; face very broad; clypeus shining, with scattered unequal punctures; flagellum ochraceous beneath; front, vertex, and mesothorax dullish with a satiny lustre; tubercles very low down on sides of thorax; tegulae piceous. Wings hyaline; stigma dark reddish, nervures lighter; first r. n. joining second s.m. at a distance from base hardly equal to half length of first t.-e.; anterior femora swollen, their tibiae thick, with a light yellow stripe in front; middle tibiae with a yellow spot near apex; hind spur with about six teeth; fifth abdominal segment dorsally with much dark fuscous hair; apical plate ferruginous, narrow-spatulate.

Hab. Cheltenham, Victoria, 1909 (*French*). Froggatt coll., no. 100.

A member of the *E. quadrimaculata* group, wholly distinct by the peculiar marking of the abdomen.

Euryglossa calliopsella, Ckll.

Two females are from Sydney, New South Wales, Nov. 29, 1910 (*W. W. Froggatt*, 128).

A male is from Sydney, Dec. 1, 1910 (*W. W. Froggatt*, 103). The male, not previously known, differs by the scape being yellow in front; flagellum thicker, and pointed at apex; frontal mark broadly rounded or convex above, and very broadly joined to supraclypeal; discal yellow stripes of mesothorax broad and dentate on inner side anteriorly, but rapidly narrowing, to fail posteriorly; anterior corners of mesothorax very broadly yellow; scutellum, axillae, and postscutellum yellow; sides of thorax nearly all yellow, but a black band from wings to hind legs; trochanters, femora, and tibiae bright yellow, anterior femora and tibiae with a dusky mark behind, middle tibiae dark brown on outer side, hind tibiae outwardly broadly black. Abdomen black dorsally, with narrow yellow bands at bases of second and third segments; venter yellow, with hind margins of segments brown; extreme sides with yellow patches; apex tufted with fulvous hair, but dorsal hair of fifth and sixth segments black. The distance of the first r. n. from the base of second s.m. is variable.